JENKINS, WILSON, TAYLOR & HUNT, P.A.

PATENT ATTORNEYS

SUITE 1200 UNIVERSITY TOWER
3100 TOWER BOULEVARD
DURHAM, NORTH CAROLINA 27707
TELEPHONE: (919) 493-8000
FACSIMILE: (919) 419-0383

WEBSITE: WWW.JENKINSWILSON.COM

DATE: June 6, 2011

TO: Examiner Daniel McCracken

FAX NO.: 571-273-6537

FROM: Amy Odenbaugh

RE: U.S. Patent Application Serial No. 10/538,470; Our Ref. No. 1680/44

NUMBER OF PAGES TO FOLLOW: 4

If transmission is poor, or if you do not receive all pages, please call (919) 493-8000 as soon as possible.

COMMENTS: Further to our conversation last week, following is an outline for tomorrow's interview. Also attached is a copy of a proposed amended claim set. Support for the amendments is indicated at the end of each claim in bold font and single brackets. If you have any questions, please do not hesitate to contact me. Thank you and best regards.

--COURTESY COPY -- DO NOT ENTER IN RECORD--

Outline for Telephone Conference
U.S. Patent Application Serial No. 10/538,470
June 7, 2011

I. Rejections involving U.S. Statutory Invention Registration H1,924 to Zabinski et al. (hereinafter "Zabinski")
   A. Rejection of Claims 2, 7-8, and 10 under 35 U.S.C. § 102(b) and/or 103(a) over Zabinski)
      i. Patent Office contends voids are inherent based on similarity of process
      ii. Patent Office contends that claim language does not recite "elemental metals"
   B. Rejection of Claims 1 and 11 under 35 U.S.C. § 103(a) over Zabinski in view of U.S. Patent No. 5,753,387 to Takami et al. (hereinafter "Takami")
      i. Patent Office contends that optimizing density is within the skill in the art and that densities overlap as evidenced by Takami
      ii. Patent Office contends that Zabinski teaches amorphous carbon with claimed metals

II. Teachings of Instant Specification with Regard to "Metal Element" and Hydrogen Storage Materials
   A. Description on page 4, lines 14-26
   B. Comparative Example 4

III. Present Claim Language and Proposed Claim Amendments for Claims 1 and 2
   A. Present Claim Language: "metal element selected from the group consisting of Zr, Hf, and Y"
   B. Proposed Amendment: "wherein the metal can combine with hydrogen to form a metal hydride or interstitial hydride"
   C. "Metal" vs. "Metal Element"
   D. "Containing" Language

--COURTESY COPY -- DO NOT ENTER IN RECORD--
Proposed Claims Amendments
U.S. Patent Application Serial No. 10/538,470

1. (Currently amended) A hydrogen storage material in the form of a film comprising a first region composed primarily of an amorphous carbon containing from 0.02 to 30 atomic % of at least one metal ~~element~~ selected from the group consisting of Zr, Hf and Y, wherein the metal can combine with hydrogen to form a metal hydride or interstitial hydride, and a second region that extends in a thickness direction of the film composed primarily of an amorphous carbon, the second region having a density from 10 to 40% lower than that of the first region. **[Support in original claims 1, 3, and 4; and in the specification at page 4, lines 14-17, and at page 4, line 30 to page 5, line 2]**

2. (Currently amended) A hydrogen storage material in the form of a film containing voids, wherein the film is of an amorphous carbon containing from 0.02 to 30 atomic % of at least one metal ~~element~~ selected from the group consisting of Zr, Hf and Y, wherein the metal can combine with hydrogen to form a metal hydride or interstitial hydride. **[Support in original claims 2 and 3; and in the specification at page 4, lines 14-17]**

3-4. (Canceled)

5. (Currently amended) A process for the preparation of hydrogen storage materials which comprises providing a source of carbon containing pieces of at least one metal ~~element~~ selected from the group consisting of [[Zr,]] Hf and Y, and forming a film composed of an amorphous carbon containing said metal ~~element~~ on the surface of a base material at a temperature of 773 K or less according to a gas phase synthesis. **[Support in original claim 5]**

--COURTESY COPY -- DO NOT ENTER IN RECORD--

6. (Currently amended) A process for the preparation of hydrogen storage materials which comprises providing a source of carbon containing pieces of at least one metal ~~element~~ selected from the group consisting of [[Zr,]] Hf and Y, and forming a film composed of an amorphous carbon containing said metal ~~element~~ on the surface of a base material under a process gas pressure of 1.33322 Pa or more according to a sputtering process. **[Support in original claim 6]**

7. (Canceled)

8. (Currently amended) The hydrogen storage material of claim 2 wherein the voids extend in ~~extends to~~ a thickness direction of the film. **[Support in original claims 2 and 4]**

9. (Canceled)

10. (Canceled)

11. (Currently amended) The hydrogen storage material of claim 1 wherein the average value of the densities of the first and the second region is from 1.4 to 2.2 g/cc^3 in a metal ~~element~~ free-state. **[Support in the specification at page 5, lines 10-12]**

12. (Currently amended) [[The]] A hydrogen storage material ~~of claim 1~~ in the form of a film comprising a first region composed primarily of an amorphous carbon containing from 0.02 to 30 atomic % of at least one metal, wherein the at least one metal ~~element~~ is Y, and a second region that extends in a thickness direction of the film composed primarily of an amorphous carbon, the second region having a density from 10 to 40% lower than that of the first

--COURTESY COPY -- DO NOT ENTER IN RECORD--

region. **[Support in original claims 1, 3, and 4; and in the specification at page 4, line 30 to page 5, line 2.]**

13. (Currently amended) The hydrogen storage material of claim 2 wherein the at least one metal ~~element~~ is Y. **[Support in original claim 2]**